

**Written testimony for the
U.S.-China Economic and Security Review Commission
on
China's green energy and environmental policies**

April 8, 2010

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Chairmen Shea and Reinsch and Members of the U.S.-China Economic and Security Review Commission, good morning and thank you for this opportunity to participate in today's discussion regarding China's green energy and environmental policies. My name is Angel Hsu, and I am a doctoral candidate researching Chinese environmental performance measurement, policy, and governance at Yale University. After having the opportunity to attend the United Nations Climate Change Conference in Copenhagen this past December, I have been specifically asked to address China's role in the Copenhagen climate negotiations and the implications of this experience for China's partnerships with the United States and developing nations.

First of all, some deemed Copenhagen a failure because the negotiations fell short of producing a legally binding agreement. However, this criticism of the Copenhagen Summit only holds if one came in with unrealistic expectations; careful observers knew way in advance that concluding a new legally binding treaty would not be possible. This limited hope for "success" was, in large part, due to the lack of domestic climate legislation in the United States, which left the U.S. in no position to sign on to a full legally-binding international agreement. Given that, realistically, a legally binding agreement was off the table well before Copenhagen, it is only fair to assess China's role in Copenhagen in terms of the degree to which they facilitated the negotiations by playing a constructive role in the resulting political deal, the Copenhagen Accord.

In the aftermath of the Copenhagen Summit, the notion that China “wrecked the Copenhagen deal”¹ became one of the most parroted sound bytes, as people were looking to point fingers and to place blame. However, mainstream media largely glossed over the role of a few oil-producing states such as Bolivia, Venezuela, and Sudan – in addition to Nicaragua and Cuba – who actually refused to sign onto the Copenhagen Accord in the waning hours of the negotiation and not China, who supported a political agreement or a Conference of the Parties (COP) decision from the start. In any case, I’d like to focus my remarks today on several noteworthy aspects of China’s role in Copenhagen and what the implications might be for the United States moving forward.

I. China’s commitments in Copenhagen

First, despite China’s reluctance to abandon the principle of common but differentiated responsibilities enshrined in the Kyoto Protocol, China made significant commitments to address their current and growing contribution to global climate change, without asking for financial assistance from developed countries to implement their own climate policies. Two weeks prior to the Copenhagen negotiations, China’s State Council – the highest policy-making body – announced that they would reduce carbon intensity by 40 to 45 percent by 2020, compared with 2005 levels. Additionally, they pledged to increase the percentage of its energy consumption satisfied through non-fossil fuel sources to around 15 percent by 2020; and add to that an increase in forest coverage by 40 million hectares and the volume of forest stock by 1.3 billion cubic meters from 2005 levels also by 2020.² Although some argued that China’s pledge was disappointing and didn’t deviate much from a business-as-usual scenario depending on GDP growth rate assumptions,³ this was a significant pledge by the top Chinese leadership and backed by national policy that signaled right before Copenhagen that China was stepping up to the plate and committing to the success of the UNFCCC process. Furthermore, framing the pledge directly in terms of

¹ Lynas, M. 2009. How do I know China wrecked the Copenhagen deal? I was in the room. *The Guardian*. 22 December.
<http://www.guardian.co.uk/environment/2009/dec/22/copenhagen-climate-change-mark-lynas>.

² http://news.xinhuanet.com/english/2009-11/26/content_12544181.htm

³ Levi, M. 2009. Assessing China’s Carbon-Cutting Proposal. Council on Foreign Relations.
http://www.cfr.org/publication/20862/assessing_chinas_carboncutting_proposal.html.

carbon intensity rather than energy efficiency, renewable energy, or reforestation efforts – the main pillars of China’s National Climate Change Plan in 2007 – demonstrated a shift in Chinese policy to show that the leadership is serious about tackling climate change. These targets, if met, would mean China would help to avoid almost 1 billion tons of carbon dioxide emissions by 2020 according to one estimate – more than any other country.⁴

With these pledges made at Copenhagen, many have asked what China’s motivations may be in addressing climate change. It became clear that remunerations or financial support for actions on climate change were not primary motivations for the Chinese delegation in Copenhagen. In its efforts to stem energy consumption and climate change, China has largely funded its own efforts, which the Chinese leadership recognized would disqualify itself as a “first candidate” in line for financial support from developed countries. The International Energy Agency (IEA) estimated that China’s commitments at Copenhagen would require \$400 billion dollars in investment in the energy sector over the next decade.⁵ With two trillion in reserves, the United States made it clear during the negotiations that China would need to look toward other funding sources and that U.S. funding in particular, would not go to China. While not completely discounting itself as a contender for future funds – especially in the light of anticipated growth in aid from \$10 billion per year by 2012 to \$100 billion per year by 2020 – China said that it has never thought of itself as first in line for financing. Instead, China contended that it wanted to ensure necessary financial backing for an agreement to take effect, asking for developed countries to meet their responsibilities under the United Nations Framework Convention on Climate Change (UNFCCC) in particular to provide funding for the most vulnerable countries – small island states and least developed countries.

Simply put, China is acting upon climate change because they want to. If China’s precedent in previous international negotiations has shown anything, it’s that China engages internationally on global issues where it perceives an alignment with their own national goals.

⁴ Finamore, B. 2010. China Records Its Climate Actions By Copenhagen Accord Deadline. Natural Resources Defense Council.

http://switchboard.nrdc.org/blogs/bfinamore/china_records_its_climate_acti.html.

⁵ Hood, M. 2009. China's climate pledge to meet a quarter of global needs: IEA. Reuters. <http://www.google.com/hostednews/afp/article/ALeqM5i7xsOk388RHmUgVLC7jcxI7KjarA>.

In light of national concerns over energy and food security, drought, changing monsoon patterns, rising sea levels, and social stability, the consequences of climate change resonate with both the Chinese leadership and increasingly the Chinese public. Xie Zhenhua, Vice Minister of the National Development and Reform Commission (NDRC) – the main policy implementing body for energy and climate change policies – has said, “The climate in China is warming. It’s something every one of us can feel.”⁶ China’s rational, “scientific approach” to climate change and the negotiations was reflected even when comparing the rosters of the Chinese and U.S. party delegations in Copenhagen. While the United States brought political representatives, China’s delegation consisted primarily of technocrats, academics, and scientists. And China has also shown that they are not backing down from these pledges made at Copenhagen. Premier Wen Jiabao in his country’s submission to the Copenhagen Accord reiterated that China “will continue to play a positive and constructive role” and “work with the international community” to help produce “comprehensive, effective and binding outcomes” that demonstrate China’s contribution to their “due share” in the “endeavor against climate change.”⁷

II. Chinese partnerships to improve environmental measurement, reporting, and verification

But how can the United States and other major trade competitors with China be assured that China will meet their targets? The United States, in particular, made it clear in Copenhagen that it would be a major challenge for Congress to pass climate legislation without assurance that major trade competitors like China were taking real “measurable, reportable, and verifiable”(MRV) actions to address climate change. While it was agreed in the Copenhagen Accord that developing countries would use domestic MRV mechanisms to review mitigation actions, China and other non-Annex I countries also agreed to “international consultation and analysis” with respect to their emissions inventories. This was certainly an example of China’s willingness to cooperate with regards to greater transparency of its emissions data.

⁶ McDonell, S. 2010. Climate change is a fact, says China. ABC News. 11 March. <http://www.abc.net.au/news/stories/2010/03/11/2842415.htm?section=justin>.

⁷ China’s submission to Appendix II: Nationally Appropriate Mitigation Actions of Developing Country Parties. Copenhagen Accord. UNFCCC.

Within China, there is strong evidence that the high-level messages voiced are being echoed on the ground. The Chinese government is making huge investments in improving monitoring of environmental pollution sources, technology, and infrastructure. Because of the decentralized manner in which policies are implemented at the local and provincial level in China, many efforts by the central government have been focused on enforcing environmental policies. In 2007 the Chinese government amended its Energy Conservation Law to include provisions that require local governments as well as large energy-consuming enterprises to implement energy statistics and reporting systems. To ensure that provinces are on track to achieving the overall 20 percent reduction in energy intensity set during the last Eleventh Five-Year Plan (2006-2010), Beijing has been holding provincial leaders accountable for these goals and traveling to individual factories to conduct on-site audits.⁸ The Chinese government also recently completed its first national census of pollution, requiring more than \$100 million U.S. dollars, 570,000 staff and nearly two years to complete.⁹ The survey mapped more than six million sources of residential, industrial, and notably agricultural pollution, which had been previously absent from measures of water contamination. These efforts demonstrate that the Chinese government is serious about the environmental policies and goals it sets, while recognizing implementation and enforcement of such policies are still challenging at the local level and more investment in local monitoring is critical in meeting their targets.

However, the Chinese government is not working alone on these efforts. The Commission's colleagues on Capitol Hill should feel confident in the multiple on-the-ground collaborative efforts between U.S. academics, research organizations, NGOs, and industry that are helping to improve capacity on environmental data and monitoring in China. Researchers at the Lawrence Berkeley National Laboratory (LBNL) have been partnering with Chinese counterparts at Tsinghua University over the past five years to evaluate many of the energy conservation programs the government has implemented to meet its 20

⁸ Lewis, J. 2010. Presentation at Brookings Institution: Washington, D.C. March 18. Transcript available here: http://www.brookings.edu/~media/Files/events/2010/0318_china_outlook/20100318_china_outlook.pdf.

⁹ Xinhua News Agency. 2010. China issues first national census of pollution sources. February 10. http://english.mep.gov.cn/News_service/media_news/201002/t20100210_185653.htm.

percent reduction in energy intensity target. Some of these notable efforts include a “Top 1,000 Energy-Consuming Enterprises” program to reduce energy consumption in China’s largest industrial enterprises, which accounted for 33 percent of national and 47 percent of industrial energy usage in 2004;¹⁰ new building energy standards and building retrofits; structural readjustments and closure of small plants; appliance standards; and a program called the “Ten Key Projects” that provides financial incentives to companies for implementing energy-efficient technology.¹¹ Their analysis revealed that many of these programs were on track in helping China meet their overall 20 percent energy intensity target, and, in some cases, were exceeding the individual targets set for each effort. Lynn Price, staff scientist in the China Energy Group at LBNL has said her team was impressed to learn “the breadth, depth, and success” of the energy-efficiency programs that China had established in a very short time period.¹² However, it seems that they still have some ground to make up this year if they are to get to the 20 percent reduction target, as the NDRC recently reported only a 14 percent decline in energy intensity so far.¹³

Other efforts by think-tanks and NGOs are also building the capacity of Chinese businesses to measure their greenhouse gas emissions. A Chinese NGO called the Innovation Center for the Environment and Transportation (iCET) is partnering with the Climate Registry – a voluntary repository in North America where businesses and organizations can report their greenhouse gas emissions in a consistent, unified manner – to create China’s first voluntary emissions registry.¹⁴ This effort could serve as a potential

¹⁰ Price, L., X. Wang, and Y. Jiang. 2008. China’s Top-1000 Energy-Consuming Enterprises Program: Reducing Energy Consumption of the 1,000 Largest Industrial Enterprises in China. Lawrence Berkeley National Laboratory. <http://china.lbl.gov/publications/chinas-top-1000-energy-consuming-enterprises-program-reducing-energy-consumption-1000-l>.

¹¹ Levine, M. and L. Price. 2009. “Assessment of China’s Energy-Saving and Emission-Reduction Accomplishments and Opportunities during the 11th Five Year Plan,” presentation at the World Resources Institute, Washington, DC. 2 December. Available online at: <http://www.slideshare.net/ecopreneur/lbnl-china-11th-5yp-energy-conservation-progress>.

¹² Wong, J. 2010. Assessing China’s 11th Five-Year Plan Energy Conservation Programs. *The Green Leap Forward*. <http://greenleapforward.com/2010/01/18/assessing-chinas-five-year-plan-energy-conservation-programs-5-year-plan/>

¹³ Xinhua. 2010. China to build industrial system of low-carbon emissions. http://www.china.org.cn/china/NPC_CPPCC_2010/2010-03/05/content_19527060.htm.

¹⁴ <http://chinaclimategy.org>.

ground-truth for national-level emissions data. While I was working at the World Resources Institute, my colleagues and I trained Chinese cement companies to use internationally standardized greenhouse gas accounting tools and methods to quantify their carbon dioxide emissions, which represent over half of China's total CO₂ emissions and five percent of the global total. The NDRC announced in 2008 that it would adopt these methods as the national voluntary standard for Chinese cement companies to quantify their emissions.¹⁵

Furthermore, academics at top universities are working to improve data and information in China. My colleagues and I at the Yale Center for Environmental Law and Policy have been working for the past two years with the Chinese Academy for Environmental Planning (CAEP), a think-tank within the Ministry of Environmental Protection (MEP) in China. Our project's aim is to systematically measure performance on a range of environmental issues, including climate change and energy in all 31 Chinese provinces. This project has revealed both progress and challenges in Chinese measurement and reporting systems. On one hand, top Chinese officials have demonstrated a desire to improve measurement practices so as to gauge the effectiveness of their management policies and to be able to communicate this progress in a manner consistent with international best practices. However, we have also found that there still are many issues with how China collects and tracks environmental data. For example, underlying methodologies and raw data are often inaccessible and all too frequently data are not verified or quality-checked. There clearly is need for greater capacity building and technical assistance to China on data collection, monitoring, and verification, which is a crucial prerequisite in ensuring accurate quantification of emissions to inform domestic climate policies and future international climate negotiations. Certainly, helping to improve environmental information is an area where the United States could play a critical role, which brings me to my final point.

III. U.S.-China Cooperation on Climate Change

¹⁵ Hsu, A. 2008. Chinese cement companies accounting for CO₂ emissions. The World Resources Institute. <http://www.wri.org/stories/2008/02/chinese-cement-companies-account-co2-emissions>.

Despite their commitments made in Copenhagen and multiple efforts on the ground to implement these actions, China is still looking, first and foremost, toward the United States for leadership on climate change. “United States first, China second” has been a mantra of the Chinese leadership with respect to climate change. On the day before I left for Copenhagen, my colleagues and I met with Liu Yuyin, a senior climate advisor to the Chinese Mission to the United Nations in New York City, who also reiterated this saying and told us that China did not consider themselves as an emerging superpower or leader in the Copenhagen negotiations. He pointed out that China was still very much a developing country and looking toward developed countries, such as the United States, for leadership. Su Wei, the lead negotiator of the Chinese delegation, echoed such sentiments for U.S. action and leadership during a press conference in Copenhagen: “In China we have a saying, it’s worth waiting for a feast and we are well prepared to wait for this banquet,” suggesting that China is hungry – but not desperate – for the United States to act.

So if China is eager but not starving for U.S. leadership, the United States is poised at a critical juncture to break this “suicide pact”¹⁶ with China and to capitalize on opportunities to cooperate together on climate change. Unfortunately, the United States is already late in coming to the game with respect to green energy and environmental cooperation with China. A colleague of mine recently met with the Ministry of Science and Technology (MOST) in Beijing and noted the heavy emphasis Chinese officials are placing on international cooperation. He told me that the Chinese already have longstanding partnerships with E.U. nations, several developing countries, and others. For example, China and Japan also announced before Copenhagen a suite of 42 projects in clean energy and environmental cooperation as part of a decade-long partnership on these issues.¹⁷ In relation to developing countries, last November China pledged \$10 billion worth of aid to Africa, which includes construction of 100 clean energy projects.¹⁸

¹⁶ Romm, J. 2008. Breaking the U.S.-China Suicide Pact. *Climate Progress* blog. Center for American Progress: Washington, D.C. <http://climateprogress.org/2008/03/27/breaking-the-us-china-suicide-pact/>.

¹⁷ Xinhua. 2009. Chinese vice premier vows to expand cooperation with Japan in energy conservation. http://news.xinhuanet.com/english/2009-11/08/content_12411687.htm.

¹⁸ Wines, M. 2009. China pledges \$10 billion to Africa. *NY Times*. 8 November. http://www.nytimes.com/2009/11/09/world/asia/09china.html?_r=3

The good news is that while the United States may have shown up late to the game, it's not over yet. All the pieces are in place for the United States and China to work together on clean energy research, energy efficiency, renewable energy, clean coal and carbon capture and sequestration projects, and clean vehicle technology – all of which Presidents Obama and Hu agreed were areas of mutual interest when they met two weeks before Copenhagen in Beijing. Michael Levi, an expert on energy and environmental issues at the Council on Foreign Relations, has described several areas in which the United States can work with China to shift to a lower carbon development pathway:

“When it comes to building codes, Washington could help develop Beijing’s monitoring and enforcement capacity; to aid heavy industry, international development banks could help provide loan financing for overhauls when Chinese capital markets do not; carbon-trading systems tailored to specific sectors could help Chinese firms sell carbon credits to wealthier countries if they exceed aggressive targets for cutting emissions intensity; wind power could be expanded by encouraging China to improve its protection of intellectual property, which would attract investment from international firms; and to help slash emissions from coal, the U.S. and Chinese governments could fund private demonstrations of CCS technology and share the resulting intellectual property so that Chinese firms could ultimately compete with those in the rest of the world.”¹⁹

While mechanisms such as the ten-year Strategic and Economic Dialogue (S&ED) and the Ten Year Energy and Environment Framework provide a platform for the U.S. and China to cooperate on climate change and energy issues, neither country has provided the level of detail and resources required to move the partnership forward.²⁰ One effort in which we have seen progress is in the U.S.-China Clean Energy Research Center formed last July to facilitate joint research and development of clean energy technologies by scientists and engineers from both countries, which was just bolstered by the announcement of \$37.5 million over the next five years from the U.S. Department of Energy to support research on

¹⁹ Levi, M. 2009. Copenhagen’s Inconvenient Truth: How to Salvage the Climate Conference. *Foreign Affairs*. September/October.
<http://www.foreignaffairs.com/articles/65243/michael-levi/copenhagens-inconvenient-truth?page=4>.

²⁰ WRI. 2009. ChinaFAQs Fact Sheet: Enhanced Bilateral Cooperation.
http://www.chinafaqs.org/files/chinainfo/ChinaFAQs_Enhanced_Bilateral_Cooperation.pdf.

buildings, clean coal, and vehicles.²¹ The United States could also look to multilateral processes by which to further engage the Chinese, such as the Major Economies Forum in which developed and developing country leaders representing 75 percent of global emissions pledged prior to Copenhagen to work together to “respond vigorously” to climate change.²²

While China already recognizes that the clean energy technology revolution is both a necessity and opportunity, Thomas Friedman writes that the United States “can’t afford to be asleep with an invigorated China wide awake.”²³ According to Friedman, such a “Green Leap Forward” will happen faster and more effectively if China and the United States work together.

Thank you and I look forward to your questions.

²¹ U.S. Department of Energy. 2010. Secretary Chu Announces \$37.5 Million Available for Joint U.S.-Chinese Clean Energy Research. 29 March. <http://www.energy.gov/news/8804.htm>.

²² Major Economies Forum. 2009. *Declaration of the Leaders of the Major Economies Forum on Energy and Climate*. 9 July. <http://www.majoreconomiesforum.org>.

²³ Friedman, T. 2010. “Who’s sleeping now?” Editorial in *The New York Times*. 9 January. <http://www.nytimes.com/2010/01/10/opinion/10friedman.html>.